ONLINE SUPPLEMENT

Methods of Implementation of Evidence-based Stroke Care in Europe: The EIS Collaboration

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This section provides supplemental tables to support the information in the main paper.

Online Supplement Contents

European Implementation Score

Work Package 2:

Questionnaire on methods for implementation of evidence in stroke care

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Index

Section 0. General information

Q0.1:

Country (please tick one option)

Belgium	
France	
Germany	
Italy	
Lithuania	
Poland	
Spain	
Sweden	
UK	

Questionnaire number (i.e. Q 0 1)

Q		

Dates of compilation								
	Day		**Month**		**Year**			
Date of first interview								
Date of last interview								

Level

Questions in the different sections are referred to your knowledge at national or regional level.

Q0.2:

At what level do you consider yourself a respondent (please tick one or more options). (Q01 = Questionnaire 01)

	Q01	**Q02**	**Q03**	**Q04**	**Q05**	**Q06**	**Q07**	**Q08**	**Q09**	**Q10**
National level										
Regional level										
specify region										

At what level do you consider yourself a respondent (please tick one or more options). (Q01 = Questionnaire 01)

	Q11	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**	**Q19**	**Q20**
National level										
Regional level										
specify region										

Q0.3:

Profession/Affiliation (please tick one or more option). Specify Main (M) and Secondary (S), if any. (Q01 = Questionnaire 1)

	Q01		Q02		Q03		Q04		Q05		Q06		Q07		Q08		Q09		Q10	
	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S
Policy-maker																				
Governmental organisation																				
Regional administrator																				
Local administrator																				
Regulatory bodies																				
Guideline committees																				
Scientific society																				
Stroke association																				
Industry																				
Research funder																				
Researcher																				
General Practitioner																				
Internal Medicine Specialist																				
Geriatrician																				
Neurologist																				
Stroke specialist																				
Other health care professional																				
Social care professional																				
Stroke patients association																				
Users group																				
Others (specify)																				

Profession/Affiliation (please tick one or more option). Specify Main (M) and Secondary (S), if any. (Q01 = Questionnaire 1)

	Q11		Q12		Q13		Q14		Q15		Q16		Q17		Q18		Q19		Q20	
	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S
Policy-maker																				
Governmental organisation																				
Regional administrator																				
Local administrator																				
Regulatory bodies																				
Guideline committees																				
Scientific society																				
Stroke association																				
Industry																				
Research funder																				
Researcher																				
General Practitioner																				
Internal Medicine Specialist																				
Geriatrician																				

	Q11		Q12		Q13		Q14		Q15		Q16		Q17		Q18		Q19		Q20	
	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S
Neurologist																				
Stroke specialist																				
Other health care professional																				
Social care professional																				
Stroke patients association																				
Users group																				
Others (specify)																				

Q0.4:

Type of interview. (Q01 = Questionnaire 1)

	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08	Q09	Q10
Face-to-Face										
Telephone										

	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Face-to-Face										
Telephone										

Section 1. National and regional policy

Q1.1

Please indicate whether, in your country, is there a National/Regional regulation (a rule or order issued by an executive authority or regulatory agency of a government and having the force of law) specifically covering different aspects of stroke care, or whether stroke care is organized according to non-mandatory policies.

Tick all that apply:

	Yes	No	Unknown
National regulation			
Regional regulation			
National non-mandatory policies			
Regional non-mandatory policies			

Q1.1a (If yes to any of Q1.1)

When was this regulation or non-mandatory policy at first established?

	Day		Month		Year			
National regulation								
Regional regulation								
National non-mandatory policies								
Regional non-mandatory policies								
Unknown								

Q1.1b: (If yes to any of Q1.1)
Which of the following aspects does this regulation cover?
Tick all that apply:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Activities to increase knowledge on stroke prevention and care						
Activities for performance benchmarking among organizations						
Quality certification/accreditation of care facilities for stroke patients						
Evaluation of performance and quality						
Guidelines of care for stroke patients						
Definition of organized pathways of stroke care						
Creation of networks of care for stroke patients (e.g. coordination between emergency system and acute care units, or across levels: primary/secondary)						
Stroke units establishment						
Thrombolysis in acute stroke patients						
Other *(specify)*:						

Q1.1c: (If yes to any of Q1.1)
Which of the following aspects does this non-mandatory policy cover?
Tick all that apply:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Activities to increase knowledge on stroke prevention and care						
Activities for performance benchmarking among organizations						
Quality certification/accreditation of care facilities for stroke patients						
Evaluation of performance and quality						
Guidelines of care for stroke patients						
Definition of organized pathways of stroke care						
Creation of networks of care for stroke patients (e.g. coordination between emergency system and acute care units, or across levels: primary/secondary)						
Stroke units establishment						
Thrombolysis in acute stroke patients						
Other *(specify)*:						

Section 2. Financial incentives

Q2.1

In your country/region are there public or private financial incentives for stroke care?

Tick all that apply:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Public financial incentives						
Private financial incentives						

Q2.1a (If yes to any of Q2.1)

Please give start date/end date of any public or private financial incentives (if applicable):

Public financial incentives: National level																		
Start date									**End date**									
Day		**Month**		**Year**				**Unknown**	**Day**		**Month**		**Year**				**Ongoing**	**Unknown**

Public financial incentives: Regional level																		
Start date									**End date**									
Day		**Month**		**Year**				**Unknown**	**Day**		**Month**		**Year**				**Ongoing**	**Unknown**

Private financial incentives: National level																			
Start date									End date										
Day		Month		Year				Unknown	Day		Month		Year				Ongoing	Unknown

Private financial incentives: Regional level																			
Start date									End date										
Day		Month		Year				Unknown	Day		Month		Year				Ongoing	Unknown

Q2.1b (If yes to any of Q2.1)

At which areas are financial incentives, at the different levels, directed?

Tick all that apply:

National level	Public incentives	Private incentives	Unknown
Stroke prevention strategies			
Primary care			
Emergency care			
Hospital care			
Specialist care (stroke units)			
Post stroke Rehabilitation programmes			
Continuing medical education			
Stroke guidelines implementation			
Other			
(specify)			

Regional level	Public incentives	Private incentives	Unknown
Stroke prevention strategies			
Primary care			
Emergency care			
Hospital care			
Specialist care (stroke units)			
Post stroke Rehabilitation programmes			

Regional level	Public incentives	Private incentives	Unknown
Continuing medical education			
Stroke guidelines implementation			
Other (specify)			

Q2.1c (If yes to any of Q2.1)

Please specify characteristics of any existing financial incentives and setting of care:

Tick all that apply:

Primary Care	Public incentives	Private incentives	Unknown
Fee-for-service (a fee to deliver above the standard level of service, e.g. GPs for improving prevention)			
Salary incentives to health professionals			
Salary incentives to local administrators			
Drug formularies (an incentive-based or tiered formulary provides financial incentives to choose drugs that are preferred by the payer)			
Incentives to hospital admissions			
Incentives to stroke units implementation			
Incentives to thrombolysis in acute phase			
Shareholding in diagnostic facilities			
Fee for preferential drugs prescriptions or use of medical supplies			
Ceiling for annual patients revenue			
Bonuses according to quality of care (e.g. percent of patients screened or achieving a target)			
Bonuses according to the total volume of prescriptions			
Other (specify)			

Hospital Care	Public incentives	Private incentives	Unknown
Fee-for-service (a fee to deliver above the standard level of service, e.g. GPs for improving prevention)			
Salary incentives to health professionals			
Salary incentives to local administrators			
Drug formularies (an incentive-based or tiered formulary provides financial incentives to choose drugs that are preferred by the payer)			
Incentives to hospital admissions			
Incentives to stroke units implementation			
Incentives to thrombolysis in acute phase			
Shareholding in diagnostic facilities			
Fee for preferential drugs prescriptions or use of medical supplies			

Ceiling for annual patients revenue			
Bonuses according to quality of care (e.g. percent of patients screened or achieving a target)			
Bonuses according to the total volume of prescriptions			
Other (specify)			

Specialist Care	**Public incentives**	**Private incentives**	**Unknown**
Fee-for-service (a fee to deliver above the standard level of service, e.g. GPs for improving prevention)			
Salary incentives to health professionals			
Salary incentives to local administrators			
Drug formularies (an incentive-based or tiered formulary provides financial incentives to choose drugs that are preferred by the payer)			
Incentives to hospital admissions			
Incentives to stroke units implementation			
Incentives to thrombolysis in acute phase			
Shareholding in diagnostic facilities			
Fee for preferential drugs prescriptions or use of medical supplies			
Ceiling for annual patients revenue			
Bonuses according to quality of care (e.g. percent of patients screened or achieving a target)			
Bonuses according to the total volume of prescriptions			
Other (specify)			

Section 3. Educational Strategies

Section 3.1. Continuing professional education

Q3.1

Please specify health professionals for whom continuing professional education is mandatory (i.e. linked to certification ability to practice, etc.) in your country:
Tick all that apply:

	Yes	No	Unknown
Primary care physicians			
Hospital physicians			
Specialists			
Nurses			
Physiotherapists			
Speech therapists			
Occupational therapists			
All health personnel			
Other *(specify)*:			

Q3.1a (If yes to Q3.1)

When was continuing professional education mandatory established in your country?

Day		Month		Year			

Q3.1b (If yes to Q3.1)

	Yes	No	Unknown
Is there a dedicated institution monitoring continuing professional education credits system for professionals (e.g. College of physicians, of nurses, etc.)?			

Q3.1c

	Yes	No	Unknown
Are pharmaceutical companies allowed to grant sponsorship to attend continuing medical education courses or conferences?			

Q3.1d

	Yes	No	Unknown
Are stroke continuing medical education initiatives also accredited by the European Accreditation Council for Continuing Medical Education (EACCME)?			

Section 3.2. Printed/electronic educational materials

Distribution of printed/electronic educational materials can be part of an educational strategy.

Q3.2

Please tick all that apply in stroke care in your country/region:

	National level			Regional level		
	Yes	No	Unknown	Yes	No	Unknown
Distribution of articles, reviews, trials results						
Distribution of stroke scales						
Distribution of journals, newsletters, bulletins						
Distribution of clinical practice guidelines						
Distribution of audio-visual materials						
Distribution of electronic publications						
Provision of free internet access to medical education websites						
Other *(specify)*:						

Q3.2a (if yes to national level of Q3.2)

Distribution of printed/electronic educational materials at national level is made by:

	Yes	No	Unknown
Governmental organisation(s)			
Non-governmental organisation(s) *(specify)*:_____ _____			

Q3.2b (if yes to any of Q3.2)
Please indicate which areas of stroke care printed or electronic educational materials are focused on:
Tick all that apply:

	Primary Care			Hospital Care			Specialist Care		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary prevention									
Acute phase management									
Rehabilitation									
Secondary prevention									
Guidelines									
Clinical pathways									
Counselling									
Other									
(specify):									

Section 3.3: Educational meetings and workshops

Educational meetings and workshops are relevant part of educational strategies.

Q3.3
Please tick all that apply in stroke care in your country/region:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Conferences, courses, symposia, lectures						
Small groups meetings, rounds, case discussion, seminars and tutorials, workshops						
Individual educational programs, interactive educational programmes, role play, training programmes						
Teaching computer programmes, task simulation, virtual reality, internet-supported educational programmes						
Other						
(specify):						

Q3.3a (if yes to national level of Q3.3)

Educational meetings and workshops at national level are made by:

	Yes	**No**	**Unknown**
Governmental organisation(s)			
Non-governmental organisation(s) *(specify)*: _____ _____			

Q3.3b (if yes to any of Q3.3)
Please tick all that apply in the different settings of stroke care:

	Primary Care			Hospital Care			Specialist Care		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Conferences									
Courses									
Rounds									
Small groups meetings									
Large groups meetings									
Workshops									
Symposia									
Lectures									
Interactive educational programs									
Interactive programs for guidelines dissemination									
Individual educational programs									
Mixed interactive and didactic education meetings									
Case discussion									
Seminars and tutorials									
Teaching computer programme									
Internet-supported educational programmes									
Simulation (task simulation, virtual reality)									
Role play									
Training programs									
Training programs on clinical pathways									
Educational outreach programs									
Combination of the above mentioned									
Other									
(specify):									

Q3.3c (if yes to any of Q3.3)
Educational meetings and workshops in stroke care, in the different settings, are aimed at which of the areas below?:
Tick all that apply:

	Primary Care			Hospital Care			Specialist Care		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary prevention									
Acute phase management									
Rehabilitation									
Secondary prevention									
Guidelines dissemination									
Clinical pathways									
Counselling									

	Primary Care			Hospital Care			Specialist Care		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Other *(specify)*:									

Section 3.4. Educational outreach visits

Educational outreach visits are face-to-face visits by a trained person to health professionals in their own setting.

Q3.4

Is this educational strategy used in your country/region in the field of stroke care?

Tick all that apply:

	Yes	No	Unknown
National level			
Regional level			

Q3.4a (If yes to any of Q3.4)

To whom are educational outreach visits, at the different levels, directed?:

Tick all that apply:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary care physicians						
Hospital physicians						
Specialists						
Nurses						
Physiotherapists						
Speech therapists						
Occupational therapists						
All health personnel						
Other *(specify)*:						

Section 3.5. Educational campaigns

Q3.5

In your country/region are educational campaigns promoted to increase knowledge of stroke and behaviour change among the general population?

Tick all that apply:

	Yes	No	Unknown
National level			
Regional level			

Q3.5a (if yes to national level of Q3.5)
Educational campaigns at national level are promoted by:

	Yes	No	Unknown
Governmental organisation(s)			
Non-governmental organisation(s) *(specify)*: _____ _____			

Q3.5b (If yes to any of Q3.5)
Please specify the start date/end date (if applicable) of educational campaigns within your country/region:

Educational campaigns: National level																	
Start date									**End date**								
Day		**Month**		**Year**				**Unknown**	**Day**		**Month**		**Year**				**Ongoing**	**Unknown**

Educational campaigns: Regional level																	
Start date									**End date**								
Day		**Month**		**Year**				**Unknown**	**Day**		**Month**		**Year**				**Ongoing**	**Unknown**

Q3.5c (If yes to any of Q3.5)
Please indicate which, if any, media are involved in educational campaigns, at the different levels:
Tick all that apply:

	National level			**Regional level**		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Television						
Radio						
Newspapers						
Billboards						
Posters						

Leaflets						
Booklets						
Internet						
Social Networks						
Internet Social Networks						
Other *(specify)*:						

Q3.5d (if yes to any of Q3.5)
Are stroke educational campaigns, at the different levels, aimed at knowledge and behaviour changes toward:
Tick all that apply:

	National level			**Regional level**		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Stroke risk factors						
Medical screening campaigns						
Acknowledgment of early stroke symptoms						
Stroke as a medical emergency, requiring urgent help						
Need to call an ambulance if a stroke is suspected						
Thrombolysis						
Other *(specify)*:						

Section 3.6. Guidelines

Q3.6
In your country, are national or regional stroke guidelines available?
Tick all that apply:

	Yes	**No**	**Unknown**
National			
Regional			

Q3.6a (If yes to any of Q3.6)
When were stroke guidelines at first made available?

	Day		**Month**		**Year**			
National Stroke Guidelines								
Regional Stroke Guidelines								

Please feel free to add more information if needed _____
_____

Q3.6b (if yes to any of Q3.6)

	Yes	No	Unknown
Were stroke guidelines developed in your own country?			

Q.3.6bi (If no to Q3.6b)

If stroke guidelines were not developed in your own country, please specify their source (country or organisation) _____

Q3.6bii (If no to Q3.6b)

	Yes	No	Not applicable	Unknown
Were stroke guidelines translated into the main language of your country?				

Q3.6c (If yes to any Q3.6)

	Yes	No	Unknown
Are stroke guidelines based on a careful and clearly stated evaluation of the best scientific evidence?			

Q3.6d (If yes to National level Q3.6)

	Yes	No	Unknown
Are stroke guidelines produced by scientific committees at a national level?			

Q3.6e (if yes to any Q3.6)

	Yes	No	Unknown
Are stroke guidelines also available in a version aimed at patients/caregivers?			

Q3.6f (If yes to any Q3.6)

Is there an institution/committee/office responsible for stroke guideline implementation and dissemination at the different levels?
Tick all that apply:

	Yes	No	Unknown
National level			
Regional level			

Q3.6g (If yes to any Q3.6)

Which of the following strategies are specifically employed, at the different levels, for the implementation of guidelines?
Tick all that apply:

	National level			Regional level		
	Yes	No	Unknown	Yes	No	Unknown
Distribution of educational material						
Distribution of structured record sheet checklists						
Educational meetings						
Interactive educational strategies (workshops and practical sessions)						

Written reminders						
Computerised reminders						
Audit and feedback						
Educational outreach visits						
Opinion leaders actions						
Local consensus processes						
Marketing (personal interviewing, focus groups discussion)						
Mass media (television, radio, newspapers, etc.)						
Internet						
Multifaceted interventions						
Other *(specify)*:						

Q3.6h (if yes to national level of Q3.6g)

Guideline implementation and dissemination at national level are promoted by:

	Yes	**No**	**Unknown**
Governmental organisation(s)			
Non-governmental organisation(s) *(specify)*:_____ _____			

Section 4. Audits

Q4.1

In your country, are there national or regional audits on stroke care?

Tick all that apply:

	Yes	No	Unknown
National level			
Regional level			

Q4.1a (If yes to any of Q4.1)

Please indicate the format(s) of stroke care audits at the different levels:

Tick all that apply:

	National level			Regional level		
	Yes	No	Unknown	Yes	No	Unknown
Written						
Electronic						
Verbal						
Other						
(specify):						

Q4.1b (If yes to any of Q4.1)

Which of the areas below do stroke care audits involve, at the different levels?:

Fill all that apply:

	National level			Regional level		
	Yes	No	Unknown	Yes	No	Unknown
Primary prevention						
Appropriate drugs indications						
Referrals to stroke units						
Acute care						
Specialist care						
Compliance with practice guidelines of stroke care						
Stroke patient outcomes						
Innovations in practice of stroke care						
Costs and quality of stroke care						
Nurse-physician collaboration						
Other						
(specify):						

Q4.1c (If yes to any Q4.1)

Please indicate the source(s) of the information gathered for stroke care audits, at different levels:

Tick all that apply:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Direct observations from patients						
Medical records						
Computerized databases						
Other *(specify)*:						

Section 5. Reminders

Q5.1

In your country/region are electronic or written reminders used for stroke care?
Fill all that applies:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Electronic						
Written						

Q5.1a (If yes to any of Q5.1)

For which of the following purpose(s) are written and/or electronic reminders used for stroke care, at the different levels?
Tick all that apply:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary prevention						
Vascular risk assessment						
Acute phase management						
Specialist care						
Diagnosis						
Prescribing drugs						
Disease management						
Ordering tests and exams						
Rehabilitation						
Secondary prevention						
Follow-up						
Adherence to therapy						
Adherence to guidelines						
Other *(specify)*:						

Q5.1b (If yes to any of Q5.1)

	Yes	**No**	**Unknown**
Do stroke patients or caregivers use reminders (e.g. to follow medications prescriptions, diet, etc.)?			

Section 6. Computerised decision support systems

Q6.1

In your country/region are computerised decision support systems used for stroke care?

Tick all that apply:

	Yes	**No**	**Unknown**
National level			
Regional level			

Q6.1a (If yes to any of Q6.1)

Which of the following statements apply to the use of computerised support systems for stroke care in your country/region?

Tick all that apply:

	National level			**Regional level**		
	Yes	No	Unknown	Yes	No	Unknown
Computerised support systems are available in most hospitals						
Computerised support systems are not frequently available						
Computerised support systems are available but not frequently used						

Q6.1b (If yes to any of Q6.1)

For which purpose(s) are computerised decision support systems used, at the different levels?

Tick all that apply:

	National level			**Regional level**		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary prevention						
Acute phase management						
Prescribing drugs, ordering tests and exams						
Administrative and clinical records (i.e. ICD IX/X diagnosis)						
Rehabilitation						
Follow-up and secondary prevention						
Guideline implementation						
Other						
(specify):						

Q6.1c

For which purpose(s) are computerised decision support systems used for stroke care, in the different settings?

Tick all that apply:

	Primary Care			**Hospital Care**			**Specialist Care**		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary prevention									
Vascular risk assessment									
Acute phase management									

	Primary Care			Hospital Care			Specialist Care		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Diagnosis									
Prescribing drugs									
Maintaining therapeutic concentrations of drugs									
Disease management									
Ordering tests and exams									
Administrative and clinical records (i.e. ICD IX/X diagnosis)									
Rehabilitation									
Secondary prevention									
Follow-up									
Adherence to guidelines									
Other									
(specify):									

Q6.2

Are electronic health records used for stroke care?

Tick all that apply:

	Yes	**No**	**Unknown**
National level			
Regional level			

Section 7. Opinion Leaders

Q7.1

In your country/region are Opinion Leaders actively sought out to help the implementation of research evidence in stroke care?

Tick all that apply:

	Yes	No	Unknown
National level			
Regional level			

Q7.2

In your country/region who would be considered an Opinion Leader?

Tick all that apply:

	Yes	No	Unknown
Policymakers			
Academics			
Health care professionals			
Health care Administrators			
Patient Association Representatives			
Celebrity Stroke Survivors			
Other *(specify)*:			

Q7.3

Which of the following would be included in an Opinion Leaders' activities?:

Tick all that apply:

	Yes	No	Unknown
One-to-one or small group teaching			
Visits to the health care providers' offices			
Formal education (e.g. lectures)			
Informal education (e.g. group discussions)			
Distribution of educational material			
Educational campaigns			
Other *(specify)*:			

Q7.4

To whom is Opinion Leaders' activity in the field of stroke care directed, at the different levels:

Tick all that apply:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary care physicians						
Hospital physicians						
Specialists						
Policymakers						
Healthcare Administrators						
Stroke patient associations						
Other *(specify)*:						

Section 8. Multiprofessional collaboration

Q8.1

In your country/region is multiprofessional collaboration (MPC), including medical, nursing, therapy staff (physiotherapy, speech therapy, occupational therapy) and social workers, part of stroke care strategy?

Tick all that apply:

	Yes	No	Unknown
National level			
Regional level			

Q8.1a (if yes to any of Q8.1)

Does MPC, at the different levels, include regular multiprofessional meetings in the different settings of stroke care?

Tick all that apply:

	National level			Regional level		
	Yes	No	Unknown	Yes	No	Unknown
Primary care						
Hospital care						
Specialist care (stroke units)						

Q8.1b (If yes to any of Q8.1)

Indicate characteristics of MPC in the different settings of stroke care:

Tick all that apply:

	Primary Care			Hospital Care			Specialist Care		
	Yes	No	Unknown	Yes	No	Unknown	Yes	No	Unknown
Are videoconferencing or audioconferencing used for multiprofessional meetings?									
Does MPC include regular multiprofessional rounds in the different settings of stroke care?									
Does MPC include multiprofessional audits with an external facilitator?									
Does MPC include Team learning activities, i.e. multidisciplinary teams to improve unit-wide clinical practice?									

MPC is essential for continuity of care of stroke patients.

Q8.2

Is there a formal relationship (e.g. defined pathways of care, protocols) between acute-phase care and GPs?

Tick all that apply:

	Yes	No	Unknown
National level			
Regional level			

Q8.3

Is there a formal relationship (e.g. defined pathways of care, protocols) between rehabilitation services and GPs?

Tick all that apply:

	Yes	No	Unknown
National level			
Regional level			

Section 9. Multifaceted interventions

Multifaceted interventions (MI) combine different implementation methods to increase the effect of single strategies.

Q9.1

	Yes	No	Unknown
In your country/region are multifaceted interventions used in the field of stroke care?			

Q9.1a (If yes to Q9.1) Describe combined methods (use a column for each combination):
Tick all that apply:

	1st MI			2nd MI			3rd MI			4th MI			5th MI		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
National legal or guidance strategy															
Regional legal or guidance strategy															
National non-mandatory policies															
Regional non-mandatory policies															
Financial incentives															
Continuing Medical education strategies															
Distribution of printed or electronic educational material															
Educational meetings and workshops															
Educational outreach visits															
Educational campaigns															
Guidelines production and dissemination															
Audits and feedbacks															
Reminders															
Computerized decision support															
Opinion leaders															
Multiprofessional collaboration															
Users' involvement strategies															
Other *(specify)*:															

	6th MI			7th MI			8th MI			9th MI			10th MI		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
National legal or guidance strategy															
Regional legal or guidance strategy															
National non-mandatory policies															
Regional non-mandatory policies															
Financial incentives															
Continuing Medical education strategies															
Distribution of printed or electronic educational material															
Educational meetings and workshops															
Educational outreach visits															
Educational campaigns															
Guidelines production and dissemination															
Audits and feedbacks															
Reminders															
Computerized decision support															
Opinion leaders															
Multiprofessional collaboration															
Users' involvement strategies															
Other *(specify)***:**															

Q9.1b (if yes to Q9.1)

Described MI, at the different levels, are used at:

Tick all that apply:

	1st MI			2nd MI			3rd MI			4th MI			5th MI		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
National level															
Regional level															

	6th MI			7th MI			8th MI			9th MI			10th MI		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
National level															
Regional level															

Q9.1c (if yes to Q9.1)

Described MI, in the different settings of stroke care, are used in:

Fill all that apply:

	1st MI			2nd MI			3rd MI			4th MI			5th MI		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary Care															
Hospital Care															
Specialist Care															

	6th MI			7th MI			8th MI			9th MI			10th MI		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**	**Yes**	**No**	**Unknown**
Primary Care															
Hospital Care															
Specialist Care															

Q9.2

	Yes	**No**	**Unknown**
Are other implementation strategies, not specifically considered in the present questionnaire, employed in your country/region?			

Q9.2a (If yes to Q9.2)

Please specify any implementation strategies employed in your country/region:

Fill all that apply:

	National level			Regional level		
	Yes	**No**	**Unknown**	**Yes**	**No**	**Unknown**
_____						
_____						

Section 10. Stroke Patients' Associations

Q10.1

In your country/region is there a stroke patient association?

Tick all that apply:

	Yes	No	Unknown		
National level				*Specify name/s*	
Regional level				*Specify name/s*	

Q10.1a (If yes to any of Q10.1)

When was/were this/these stroke patient association(s) at first established?

		Day		Month		Year			
National level	*Start date/set up*								
Regional level	*Start date/set up*								

Please feel free to add more information if needed _____

_____

Q10.1b (if yes to Q10.1)

	Yes	No	Unknown
Do stroke patient associations promote specific initiatives?			

Q10.1bi (If yes to Q10.1b)

Please specify initiatives promoted by stroke patient associations:

Tick all that apply:

	Yes	No	Unknown
National/ Regional campaigns to promote stroke awareness			
Surveys on stroke prevention awareness strategies			
Campaigns to encourage healthy lifestyles (e.g. blood pressure and cholesterol awareness and monitoring)			
Campaigns to promote the establishment of stroke units			
Provision of rehabilitation to stroke patient			
Implementation of secondary prevention strategies			
Psychological support/support groups for stroke survivors and/or carers			
Other *(specify)*:			

Q10.1c (if yes to Q10.1)

	Yes	No	Unknown
Do stroke patient associations actively offer services?			

Q10.1ci (If yes to Q10.1c)

Please specify which services are offered by stroke patient associations:

Tick all that apply

	Yes	No	Unknown
Information, advice and support services			
Stroke prevention services			
Communication support			
Reablement of social inclusion			
Carer support (training, economic support, reimbursement, tax reduction)			
Other *(specify)*:			

Q10.1d (if yes to Q10.1)

Are stroke patient associations involved in stroke research in any of the following ways:

Tick all that apply:

	Yes	No	Unknown
Identifying priorities for research			
Assisting in the design of research			
Preparation of material used to consent and inform stroke research subjects			
Interpretation of research results			
Dissemination of research findings			
Implementation of stroke research findings			
Other *(specify)*:			

Q10.1e (If yes to Q10.1)

Are stroke patient associations involved in planning strategies concerning:

Tick all that apply:

	Yes	No	Unknown
Implementation of stroke services			
Management of acute stroke (guidelines definition, etc.)			
Prevention (primary, and secondary; mass media campaigns; health education campaigns in school; ban of smoking in public places etc.)			
Rehabilitation after stroke			
Evaluation of stroke outcome and quality assessment.			
Other *(specify)*:			

Q10.2

	Yes	No	Unknown
Is there a requirement for consultation or involvement (also on a voluntary basis) of patients and/or patients associations in services for stroke survivors?			

Q10.2a (If yes to Q10.2)

In which of the following areas is patient/patient association consultation/involvement involved:

Tick all that apply

	Yes	No	Unknown
Stroke service development			
Stroke quality assessment			
Stroke audits			
Stroke audits (patients'report)			
Stroke information campaign planning			
Stroke educational programs			
Stroke clinical pathways			
Stroke guidelines (version for professionals)			
Stroke guidelines (version for patients)			
Other *(specify)*:			

Section 11. Performance indicators

Q11.1

Indicate which among the following are used, in your country/region, as measures for defining performance of health care providers in stroke care:

Tick all that apply:

National level	**Yes**	**No**	**Unknown**
Stroke unit care			
Stroke patients admitted to a stroke unit/total admissions for stroke			
Door to hospital time			
Number of patients hospitalised within 3 hours from symptoms			
Proportion of time in stroke unit			
Brain imaging			
Carotid vessels imaging			
Swallowing test			
Assessment by physiotherapist			
Assessment by occupational therapist			
Thrombolytic therapy			
Time to thrombolytic therapy			
Antiplatet therapy			
Anticoaugulants in patients with atrial fibrillation			
Lipid lowering			
Blood pressure lowering			
Length of stay			
Death during hospital period			
Discharge destination			
Death or disability at 1-3 months			
Long term death or disability			
Institutionalisation rates			
Complication rates			
Quality of life measures			
Healthcare process outcomes			
Readmission rates			
Prevention therapy adherence rates			
Patient satisfaction with services			
Results of cost-benefit analyses			
Provision of information to patients and relatives			
Early supported discharge			
Other *(specify)*:			

Regional level	**Yes**	**No**	**Unknown**
Stroke unit care			
Stroke patients admitted to a stroke unit/total admissions for stroke			
Door to hospital time			
Number of patients hospitalised within 3 hours from symptoms			
Proportion of time in stroke unit			
Brain imaging			
Carotid vessels imaging			
Swallowing test			
Assessment by physiotherapist			
Assessment by occupational therapist			
Thrombolytic therapy			
Time to thrombolytic therapy			
Antiplatet therapy			
Anticoaugulants in patients with atrial fibrillation			
Lipid lowering			
Blood pressure lowering			
Length of stay			
Death during hospital period			
Discharge destination			
Death or disability at 1-3 months			
Long term death or disability			
Institutionalisation rates			
Complication rates			
Quality of life measures			
Healthcare process outcomes			
Readmission rates			
Prevention therapy adherence rates			
Patient satisfaction with services			
Results of cost-benefit analyses			
Provision of information to patients and relatives			
Early supported discharge			
Other *(specify)*:			

Table I. Frameworks of stroke care in the 10 EIS countries

	General framework of care	Acute care	Rehabilitation and community services
Belgium	Population: 10.9 million Incident strokes/year: ~19,300 Belgium has a complex structure for healthcare delivery, with a mix of academic, public and private hospitals. Most aspects of healthcare are regulated at the federal level, while other, like preventive care and quality control, are regulated by regional authorities. Healthcare is paid for by the population through taxation, with a copayment system for most services. Through a DRG system, each hospital receives, by the federal government, feedbacks on performance in terms of length of stay and resource utilisation for stroke. Hospitals exceeding national average by a certain amount have to pay fines. Prevention services are mainly offered by GPs, cardiologists, geriatricians or endocrinologists.	Ambulances transport patients to the nearest hospital equipped with an emergency room. No rerouting to hospitals equipped to treat stroke is performed. Hospitals with an emergency room are required to provide neurologic services and to have a neurologist on staff. Many hospitals have voluntarily deployed stroke units, and provide excellent stroke unit care, although no specific legislation or requirements are set forth. Most academic centres and large regional hospitals are equipped with stroke units. Guidelines for the creation of stroke units have been published by the Belgian Stroke Council, a professional organisation. Since there is no specific regulation, it is difficult to estimate the number of stroke units and stroke unit beds. Stroke units typically provide cardiac and neurologic monitoring, neurologist care, multidisciplinary teams with dysphagia assessment and early rehabilitation. They have easy access to advanced imaging and neurosurgery. Typically, no ventilation is performed on a stroke unit. Intensive care units readily admit patients in need of ventilation or for subarachnoid haemorrhage care. Some hospitals prefer to offer thrombolysis in the emergency room and monitor patients in a medium care environment together with other neurologic emergencies or in a cardiac monitoring unit. All hospitals can provide thrombolysis, although official numbers on the hospitals who provide thrombolysis and its percentage are lacking.	After acute care, patients are either transferred to specific rehabilitation hospitals, or in house rehabilitation units. Physiotherapy and speech therapy can be provided at home, whereas occupational therapy can only be offered in the hospitals. Neurologists are typically not involved in the long term prevention for stroke patients, although many will see their patients in a stroke clinic 3 to 6 months after stroke or even at later stages.

	General framework of care	Acute care	Rehabilitation and community services
England	Population: 53.0 million Incident strokes/year: ~120,000 Virtually all stroke care is provided by the National Health System (NHS), with very little involvement of the private sector. Care is provided free at the point of delivery, covering all costs including hospital stay, drugs, therapy and subsequent community care. Where ongoing social services support is needed, this is sometimes means tested. However where a patient cannot afford to pay, this is then provided by the state. The health service separates commissioners from providers. The commissioning is done by the Primary Care Trusts and provision by community health services and hospitals. There is a strong primary care system with virtually all patients having a GP and virtually everyone seeing their GP each year. There are financial incentives to encourage good secondary prevention (additional payments for achieving a certain proportion of patients with blood pressure control/statin prescription, etc.). The National Sentinel Audit data is conducted every 2 years (100% participation). Results are made available to the public. The health service is in the middle of the most radical reorganisation in its 65 year history under the coalition government. The proposals to hand all commissioning to GPs and encourage competition within the service from private suppliers and voluntary organisations is meeting with considerable opposition so the future is very uncertain.	The whole country is served by regional stroke and cardiac networks that play a role in helping in the development of stroke services, monitoring quality and, in some areas, working with commissioners. Medical care is predominantly done by stroke physicians whose initial training was in geriatric medicine, although there are some whose principal specialty is neurology. The fact that the specialty came from geriatrics explains why the initial focus on improving stroke care in the UK was around rehabilitation. Variable proportions of stroke patients are admitted to hospital, depending on geography. In London (South London Stroke Register data) about 90% admitted. In Oxford significantly less (~ 50%). There is a strong tradition of multidisciplinary care, i.e. teams of doctors, nurses, physiotherapists, occupational therapists, and speech therapists working in stroke units. Virtually all units will have access to all these specialists. All hospitals admitting acute stroke patients have a stroke unit – see 2010 National Sentinel audit data for detailed description of organisation and processes of care www.rcplondon.ac.uk/stroke. These reports provide details of bed numbers, staffing, thrombolysis rates etc. In 2010, 88% of patients were admitted to a stroke unit at some stage during their hospital admission. The thrombolysis rate has increased from 1.8% in 2008 to 5% nationally in 2010. All hospitals have a physician with responsibility for stroke. In several parts of the country stroke services are undergoing a radical restructuring in line with recommendations made in the National Stroke Strategy. For example, in London until 2010 acute stroke care was provided in one of 32 acute hospitals, of very variable quality even though each hospital did have a stroke unit. In July 2010 all acute stroke patients were taken to one of 8 accredited hyperacute stroke units (HASU) for the first 2-3 days of their stay and then transferred to one of the accredited stroke units for ongoing care if required. Several hospitals were not accredited and ceased providing any stroke care at all. Length of stay has fallen by a mean of about 4 days since introduction of the system and thrombolysis rates have risen from about 3% to about 12% of unselected stroke admissions. A similar system has been introduced in Manchester. Other parts of the country have developed telemedicine networks.	Patients remain in hospital until ready for discharge home or to a nursing home. In most cases, however, it is not infrequent for patients to be moved from an acute facility to a rehabilitation unit. However this will all be under the state funded NHS system and it is usual for the same physician to manage the patient in the acute and rehabilitation facilities. Community services for patients requiring on-going treatment after discharge are variable but some form of service is available everywhere, ranging from early supported discharge, specialist longer term stroke rehabilitation, day hospitals, out-patient rehabilitation, in hospital therapy departments. It is usual for the hospital team to follow patients up after discharge from hospital on at least one occasion and sometimes more. The Stroke Association is the major voluntary organisation that provides the bulk of patient information, runs support groups and employs stroke support workers. It also collects and distributes money for research and acts as a lobbying group. It is possible to support people with profound disability in the community if that is what the patient wants. For example with carers visiting 4 times a day, meals being delivered, equipment such as a hospital bed, hoist, commode, incontinence pads etc. being provided.

	General framework of care	Acute care	Rehabilitation and community services
France	Population: 63.1 million Incident strokes/year: ~150,000 The management of stroke in France became an emergency care in 2003, with the first Ministry Order, in 2007 with a second one and in March 2010, with a National Plan for stroke identifying the number of stroke units, the stroke networks, the training, with a Stroke Diploma, and the financial aspects, with a specific financial line. Every year there is one national campaign to the general population, performed by the Health Ministry, the association of patients (France-AVC) and the French Stroke Society, regarding the first symptoms of stroke, and the need to call emergency number 15. Behind the phone number 15, there is a doctor able to identify the first symptoms of stroke, and to organize the admission to a hospital able to manage any stroke, with cerebral imaging and a stroke unit. The National Stroke Plan, in March 2010, has changed stroke care in France, aiming at increasing the number of stroke units and stroke doctors. It also gave additional funding for patients treated in a stroke unit, to improve their number (€450 per day).	In each of the 16 regions of France, there is a University Hospital with a stroke unit of reference, associated to general hospitals by stroke networks and telemedicine. In general, the need is of 4 stroke units beds per 100,000 inhabitants. The total number of stroke units is 120, below the objective of 170. Their type is not uniform. Some offer true intensive care for stroke (1 nurse for 4 beds, with 1 resident and 1 doctor), associated to beds dedicated to stroke, to end the investigations on the causes. For 1 bed of intensive care for stroke (intensive stroke unit), there are 3 beds of non- intensive stroke unit. Some hospitals have no intensive care beds but only a non-intensive care stroke unit. In France, less than 40% of stroke patients are admitted to a stroke unit, when the National Stroke Plan orders 100%. Only hospitals with stroke units are authorised to give thrombolysis. Less than 3% of cerebral infarcts are treated with thrombolysis.	To have a stroke unit, it is necessary to have a rehabilitation service, but the number of rehabilitation services is not sufficient. Secondary prevention is made according to the international guidelines with prevention of recurrent stroke from atheroma with the association of antihypertensive drugs + statins + antiplatelets, and of recurrent cardioembolic strokes with anticoagulants. The Dijon Stroke Registry found that this prevention was efficacious with a decrease of recurrent strokes by 16% within 4 years.

	General framework of care	Acute care	Rehabilitation and community services
Germany	Population: 81.8 million Incident strokes/year: ~200,000 Germany has a universal multi-payer system, with two main types of health insurance: "State health insurance" (~90%) and "Private" (~10%). Financial contributions depend mainly on income, with joint employer-employee contributions. At point of delivery, health care is mainly free, although percentage of deductibles and additional payments are increasing, e.g., a fee of €10 payable quarterly upon each visit to a physician was introduced in 2004. Less than 1% of the population is without health insurance. Primary prevention of cardiovascular diseases and stroke is mainly coordinated by GPs. In recent years, public campaigns attempted to increase people's awareness of stroke, and the importance of calling emergency services immediately, with moderate short-term effects, e.g., a shorter time to admission in women in one community-based intervention project.	The Ambulance Service aims to take patients very rapidly to the hospital, in most regions to nearest stroke unit. Some regional initiatives to improve pre-hospital management by use of telemedicine or early diagnostics in the ambulance also exist. Especially in urban areas, about 20% of all stroke and TIA patients reach hospital in the first 2 hours after onset of symptoms. Stroke units were established since the mid-nineties, and are organised as a 2-stage model, with local (stage I) and regional (stage II) stroke units according to the recommendations of the German Stroke Society. Regional stroke units have all capabilities to diagnose and treat stroke patients appropriately, while local stroke units should have a close cooperation with a regional stroke unit for providing specific treatments (e.g., neurosurgery, intervention neuroradiology). In 2010, about 163 stroke units were certified by the German Stroke Society, the German Stroke Foundation and a professional certification organisation (from a total of 2,084 hospitals in Germany in 2009) with a total of 950 beds (mean 5.7, range 4-14). More than 40 hospitals with additional 250 beds are holding a former certification and are waiting for recertification, increasing the estimated number of certified stroke unit beds in 2010 to a total of ~1200. The German acute stroke units are focusing on fast diagnosis and treatment, monitoring vital parameters, early mobilisation, rehabilitation and prevention in the acute phase. There are also different models established to provide comprehensive stroke unit care over the acute time period. Mean length of stay on an acute stroke unit is 3 days. In 2010 it is estimated that about 60% of stroke patients are treated on a certified stroke unit. The other stroke patients are treated in ICUs, neurosurgical departments or general wards in hospitals with certified SUs or in other hospitals. In 2008, 7-10% of patients treated in the hospitals participating to the German Stroke Register Study Group (ADSR) received thrombolysis.	About a quarter of patients is discharged to a rehabilitation facility after acute care. Three months after stroke, 66-85% of patients comply with their secondary prevention prescription at discharge.

	General framework of care	Acute care	Rehabilitation and community services
Italy	Population: 60.6 million Incident strokes/year: ~200,000 National Health System (NHS) is paid for by the population through general taxation, and covers general practice, outpatient and inpatient treatments, including tests, surgery and medication during hospitalisation, and the cost of most (but not all) drugs. National government sets fundamental levels of care (Livelli Essenziali di Assistenza - LEA), covering treatments guaranteed to all, paid for by the government, or with a share of the costs (but various categories are exempted). The NHS is largely under the control of the regional governments, which are in charge of regional healthcare services, strategies, and healthcare policies implementation. NHS pays general practitioners a fee per capita per year, a salary system that does not reward repeated visits. A private sector also exists, with a minority role in acute phase and a more relevant role in outpatient services, such as diagnostics and rehabilitation.	Stroke patients are mainly admitted to general medicine wards, neurological wards, stroke units and geriatric wards. There are 677 hospitals admitting at least 50 stroke patients per year. Less than one third of total stroke patients are admitted to a stroke unit. The total number of stroke units is 130 (90% lead by neurologists). There are 87 stroke units in Northern, 28 in Central and 15 in Southern Italy. The national mean is of 1 stroke unit/466,000 inhabitants. There are wide differences among regions, especially between Northern-Central regions and Southern regions. For instance, there are 34 stroke units in Lombardia (1/289,000 inhabitants) and 17 in Piedmont (1/261,000 inhabitants) - Northern Italy -, 10 in Tuscany (1/373,000 inhabitants) - Central Italy-, 2 in Campania (1/2,910,000 inhabitants), 2 in Calabria (1/1,005,000 inhabitants), and 4 in Sicily (1/1,260,000inhabitants) - Southern Italy -. A total of 170 centers have the authorization to perform thrombolysis, but only 129 are really active. Again, access to thrombolysis is much reduced in Southern Regions. In 2012, a total of 2400 patients were treated in Italy with thrombolysis.	After acute phase, patients may be transferred to rehabilitation hospitals, outpatient services, local rehabilitation services. Rehabilitation services include most often physiotherapy and speech therapy, and less frequently occupational therapy. The Stroke Association ALICE is the major voluntary organisation that provides patient information and runs support groups. ALICE also promote campaigns on prevention and information on stroke units, thrombolysis and rehabilitation at national, regional and local levels.

	General framework of care	Acute care	Rehabilitation and community services
Lithuania	Population: 3.3 million Data on incident strokes are missing. 22,880 registered stroke cases in 2011. Virtually all stroke care is provided by the National Health System (NHS). NHS is paid for by the population through general taxation. Care is provided free at the point of delivery, covering all costs during hospital stay and while in rehabilitation. Most primary prevention of stroke is coordinated by GPs. In recent years public campaigns, funded by the Government have increased people's awareness of stroke and the importance of calling emergency services immediately rather than calling their GP. All patients with acute stroke are admitted to hospital, but hospitalization of those with TIA is not obligatory.	Altogether, 24 acute hospitals may admit acute stroke patients, including two University Hospitals. Stroke patients are mainly admitted to neurological wards or ICU. While there is no formal requirement to have an organized stroke unit or formal certification to provide medical care for stroke patients, all hospitals provide neurological monitoring, multidisciplinary teams and early rehabilitation. Neurosurgery is concentrated in 3 major hospitals, therefore all stroke patients with a need of neurosurgery are transferred to these hospitals. Out of the 24 acute hospitals, 13 can provide thrombolysis, although official numbers on the hospitals who provide thrombolysis and its percentage are lacking. Based on unofficial data, nearly 200 patients were treated with thrombolysis in 2012, and the numbers are tending to increase every year.	Patients remain in hospital until ready for discharge to inpatient rehabilitation, home or to a nursing home. Inpatient rehabilitation can last up to 48 days and includes individual and group physiotherapy, speech therapy, rehabilitation of other cognitive impairments and occupational therapy. Physiotherapy and speech therapy can be provided at home, whereas occupational therapy can only be offered in the hospitals. Neurologists are typically not involved in the long term prevention for stroke patients, but some of them may see stroke victims as out-patients after rehabilitation.

	General framework of care	Acute care	Rehabilitation and community services
Poland	Population: 38.5 million Incident strokes/year: ~75,000 Healthcare service is covered by the National Health Fund, financed by the population through taxation. Healthcare is largely free at the point of delivery. The main healthcare policy maker is Ministry of Health, while the National Health Fund is dedicated to financing and monitoring healthcare delivery. Responsibility for health services is devolved to 16 regional National Health Funds. Most primary prevention is coordinated by GPs, who work to targets, which are the basis for remuneration, for detection and control of vascular risk factors. In recent years, public campaigns on stroke or cardiovascular diseases were funded by the government, but with little impact on stroke awareness. The Helsingborg Declaration led to the foundation of the National Stroke Prevention and Treatment Programme (1998-2008) which later became part of the National Cardiovascular Disease Prevention and Treatment Programme POLKARD. The aims of those programs were: improvement of acute and post-acute management, implementation of innovative therapies, development of post-stroke rehabilitation, and monitoring of epidemiology.	The Polish Ambulance Service aims to take patients very rapidly to the nearest hospital which can provide thrombolysis (where appropriate) or stroke unit care. The majority of TIA patients, and many with minor non disabling strokes, are not admitted to hospitals, while patients with more severe strokes are usually hospitalised. Over 200 acute hospitals admit acute stroke patients, varying from large teaching hospitals in urban areas, with more than 1000 beds, to local district general hospitals, with less than 100 beds. Healthcare for stroke patients is provided mostly by stroke units, which are organized as an integral part of neurological wards. A stroke unit network consists of over 110 stroke centres, mainly primary stroke units. There are 5 comprehensive stroke units with on-site availability of interventional neuroradiology, neurosurgery and 24/7 availability of magnetic resonance imaging. Although it is recommended to admit stroke patients to stroke units, still many are admitted to general medicine wards. Most stroke units admit patients of all ages. Mean age is ~71 years. Mean length of stay is a ~15 days, but this includes only acute care. Thrombolysis services vary by regions. In 2010, ~1600 patients were treated with thrombolysis, slightly more than 2% of patients admitted with ischemic stroke (for 2011 estimates are higher). After POLKARD, establishing and equipping stroke units programs have raised their number from 3 to the current 111; thrombolysis, introduced in 2003, carotid angioplasty and stenting procedures were also supported and supervised.	Stroke units provide both acute care and acute rehabilitation. Patients who need longer rehabilitation are transferred to rehabilitation units on non-acute hospital sites. Over 100 rehabilitation wards declare to provide services for post-stroke patients, but only 17 offer comprehensive early post-stroke rehabilitation, including individual (one-to-one) and group physiotherapy, speech therapy, rehabilitation of cognitive impairments, and occupational therapy. In 2008, number of available beds covered only 38.5% of the estimated number of beds needed in rehabilitation departments for sub-acute stroke patients. There is a limited number of cerebrovascular diseases out-patients clinics, providing long-term follow-up ambulatory care for stroke patients.

	General framework of care	Acute care	Rehabilitation and community services
Scotland	Population: 5.2 million Incident strokes/year: ~12,000 Scotland has a National Health Service which is paid for by the population through taxation, and which is largely free at the point of delivery. Since devolution in 1999, responsibility for running the NHS in Scotland has rested with the Scottish Government. Responsibility for health services is devolved to 14 regional NHS Health Boards, each of which has a Managed Clinical Network for stroke. Most primary prevention of stroke is coordinated by GPs who work to targets, which are the basis for remuneration, for detection and control of vascular risk factors. In recent years, public campaigns, funded by the Government but coordinated by voluntary organisations, have increased people's awareness of stroke and the importance of calling emergency services immediately, rather than calling their GP.	The Scottish Ambulance Service aims to take patients very rapidly to the nearest hospital which can provide thrombolysis (where appropriate) or stroke unit care. Scotland's more remote, and island communities are served by the air ambulance service, though increasingly telemedicine is used to deliver thrombolysis, TIA clinics and specialist rehabilitation to people in these remote locations. Approximately 9,000 of the 12,000 incident strokes per year are admitted to hospital, whilst the remainder are managed by their GPs and in outpatient clinics. The majority of TIA patients, and many with minor non disabling strokes, are not admitted but are assessed and investigated in specialist rapid access outpatient clinics. Patients with more severe strokes are usually admitted to hospital. Thirty-two acute hospitals admit acute stroke patients. These vary from large teaching hospitals in urban areas with more than 800 beds to local district general hospitals with less than 100 beds. All hospitals admitting more than 50 stroke patients a year have a stroke unit and some smaller hospitals have developed stroke teams. Acute stroke units are generally of the non-intensive or semi-intensive variety, although most will have access to a general, or neurointensive care facility. Increasing numbers of the acute stroke units are becoming comprehensive units, offering both acute care and rehabilitation on an acute hospital site, although many still transfer patients for longer term rehabilitation to a stroke rehabilitation unit on a non acute hospital site. In 2010, 82% percent of patients admitted to hospital in Scotland with a stroke were cared for in a stroke unit. There are currently 46 stroke units with a total of 799 beds. Most stroke units take patients of all ages, typically a mean of about 75 years. Their mean length of stay is about 25 days, but this includes both acute care and all inpatient rehabilitation, which can last as long as 6 months. Thrombolysis services vary. Some regions have centralised these, whilst others use telemedicine to deliver thrombolysis in the most local acute hospital which has a stroke unit and brain scanner. In 2010, 514 patients were treated with thrombolysis (9.9/100,000 population per year or approximately 7% of admitted patients with ischemic stroke), but numbers are increasing year on year as services become more widespread.	Some centres provide early supported discharge services and specialist nurse follow-up in the community, and all provide some community-based rehabilitation and social care. Patients who are very badly affected may be cared for in long term NHS beds or private nursing homes, although the latter are partly funded by the government. The patients' GPs generally oversee their long-term secondary prevention, although the individuals' plan is usually provided by the hospital services.

	General framework of care	Acute care	Rehabilitation and community services
Spain	Population: 47.1 million Incident strokes/year: ~110.000 Spain has a complex structure for healthcare delivery, with a mix of public and private hospitals. Urgent stroke attention is predominantly public. Most aspects of healthcare are regulated at regional level, while others, like prevention and quality control, are regulated by central authorities. Healthcare is paid for by the population through taxation, without copayment for most services. Through DRG, each hospital receives, by the regional government, feedbacks on performance in terms of length of stay and resource utilisation for stroke. Prevention services are mainly offered by GPs, cardiologists, or endocrinologists.	Ambulances transport patients to the nearest hospital equipped with a stroke unit (SU). Rerouting to hospitals equipped to treat stroke is performed when patient is attended in a hospital without SU. Hospitals with an ER are required to provide neurologic services without a neurologist on staff. Many hospitals have voluntarily deployed SU, and provide excellent SU care. Spain has 46 SU with 190 beds. Certain Spanish regions have insufficient number of SU. Guidelines for the creation of SU have been published by the Spanish Neurological Society. SU typically provide cardiac and neurologic monitoring, neurologist care, multidisciplinary teams with dysphagia assessment and early rehabilitation. They have easy access to advanced imaging and neurosurgery. Typically, no ventilation is performed. Intensive care units readily admit patients in need of ventilation or for subarachnoid haemorrhage care. All SU units can provide thrombolysis, although official numbers on the hospitals providing thrombolysis and its percentage are lacking. The Stroke Spanish Group performed a survey on 2011 and they found that 2672 thrombolysis were performed. Endovascular treatment is now being performed at 21 centres 24 hours a day. Six centres have telemedicine.	After acute care, patients are either transferred to specific rehabilitation hospitals, or in house rehabilitation units. Physiotherapy and speech therapy can be provided at home in certain regions, whereas occupational therapy can only be offered in the hospitals. Neurologists are typically not involved in the long term prevention for stroke patients, although many will see their patients in a stroke clinic 1 to 6 months after stroke or even at later stages.
Catalonia	Population: 7.5 million Incident strokes/year: 218/100,000 in men and 127/100,000 in women. 14,000 hospital admissions/year (12,500 in publicly-financed hospitals). In Spain, powers in health matters were gradually transferred from the Central Government to the Autonomous Communities between early eighties and late nineties, and Catalonia was the first to achieve devolution (1981). Catalonia has its own National Health Service (CatSalut) paid for by population through taxation (although fiscal devolution has not been achieved yet).	Acute stroke care is provided by 35 Community Hospitals (CH), 8 Primary Stroke Centres (PSC) and 6 Comprehensive Stroke Centres (CSC). The Stroke Code (SC) has been operating with full coverage since May 2006. Stroke patients fulfilling SC criteria are transferred to the nearest PSC by ambulances (rarely by helicopter), for assessment by stroke experts and iv thrombolysis when necessary. The initial model has been further developed to include CSC for more complex patients. CSC were designated among hospitals previously identified as PSC, and provide highly expert advice and endovascular therapies. Telestroke is effective between 6 CH and their respective CSCs. The telestroke system 2.0 will connect CSC to their PSC and CH. Eight of the 49 acute public hospitals (2 PSC and all CSC) admit patients to a SU, provided with expert staff, multidisciplinary team, continuous monitoring and agreed clinical protocols. All SU are semi-intensive (nurse patients ratio 1:4-6), for a total of 42 beds (1 SU bed/178,500 inhabitants, or 0.6 beds/100,000). The median length of SU stay is 3 days. Usually, patients admitted to a CSC or a PSC stay a few days in the semi-intensive SU and then are discharged to the neurology wards, not recognised as SU due to the lack of semi-intensive care. In the 6 remaining PSC, patients are initially admitted to non exclusive semi-intensive care units. Neurology wards have variable proportion of stroke-dedicated beds served by neurologists and nurses trained in stroke (nurse patients ratio= 1:10-12). The Catalan Stroke Audits found 23% of patients admitted to a SU (excluding semi-intensive but non-exclusive units and neurology wards). Twenty hospitals are delivering iv thrombolysis: 8 PSC, 6 CSCs, and 6 Community Hospitals served by telestroke. In 2010 thrombolysis rate (iv rtpa/ischemic strokes) was 10.5%, and reperfusion rate (iv+endovascular treatments/ischemic strokes) 12.4%.	After discharge from acute-care, there are different options, based on degree of disability, cognition, and family support. They include convalescence hospitals, rehabilitation stroke units, long-term stay centres, rehabilitation day hospital, ambulatory rehabilitation and home rehabilitation. The secondary prevention strategy is usually planned by acute hospital services but followed-up by family and community physicians (GPs).

	General framework of care	Acute care	Rehabilitation and community services
Sweden	Population: 9.4 million Incident strokes/year: ~29,500 annual strokes admitted to hospital (at least 10% of all strokes are not hospitalized). Sweden has a national health service with in-hospital services provided free of charge. Primary prevention of stroke through detection and modification of risk factors is mainly covered by primary care. All Swedish citizens should be linked to one specific primary care unit. General government promotes policies on tobacco and alcohol use, physical activity and healthy diet.	Ambulance services are fully built out to allow rapid transport to hospital in cases of suspected stroke. Helicopter services are available in remote geographical areas, mainly some northern parts of Sweden. There is a national 112-calling system and also a telephone-based information service. There are 72 hospitals treating acute stroke patients. Eleven hospitals admit >500 patients with stroke per year, whereas 6 hospitals admit <100 patients. All the 72 hospitals have stroke units, mainly comprehensive non intensive care units, providing acute care and initial rehabilitation. Median length of stay is 12 days at the acute units, and median total time at hospital is 16 days. There are about 1400 beds at the stroke units, corresponding to about 15 beds per 100 000 population. The proportion of patients treated at stroke units was 86.5 % during 2009 (based on Riks-Stroke data) and has gradually increased from about 70% in 2000 and about 80% in 2006. There are regional arrangements to ensure access to thrombolytic therapy. Proportion of patients thrombolyzed have increased from 1% in 2003 to 8.3% in 2009 (calculated with target group 18-80 years and ischemic stroke as denominator). However, regional (county council) variations range from 4.1% to 12.8 %. Total number trombolyzed in 2009 was 945 patients. Three out of 72 acute hospitals do not treat with thrombolytics; ambulance transports for patients in these geographical areas are redirected to another nearby hospital.	Early rehabilitation is provided at stroke units, whereas the hospital-based further rehabilitation varies between hospitals: some have geriatric wards, whereas other hospitals discharge to nursing homes with rehabilitation facilities. Secondary prevention is initiated in-hospital and followed up through primary care. Almost all patients with ischemic stroke (93%) are discharged with antithrombotic therapy. Fifty-six percent of patients with ischemic stroke and ischemic stroke <80 years are discharged on anticoagulants. About 60% of patients with ischemic stroke are discharged with statins and about 80% are discharged with blood pressure lowering therapy. About half of all smokers on admission have stopped smoking at 3 months.

Table II. Aspects of stroke care covered by regulations at national (N) and regional (R) levels, by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Activities to increase knowledge on stroke prevention and care			•		•	•				•								•		
Activities for performance benchmarking among organizations			•																	
Quality certification/ accreditation of care facilities for stroke patients						•			•	•								•		
Evaluation of performance and quality			•		•	•				•								•		
Guidelines of care for stroke patients			•		•	•														
Definition of organised pathways of stroke care			•		•	•				•										
Creation of networks of care for stroke patients			•		•	•		•		•								•		
Stroke units establishment			•		•	•		•		•										
Thrombolysis in acute stroke patients			•		•	•	•		•	•										

Table III. Aspects of stroke care covered by non-mandatory policies at national (N) and regional (R) levels, by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Activities to increase knowledge on stroke prevention and care			•	•			•	•	•	•	•	•	•		•		•	•	•	
Activities for performance benchmarking among organizations			•	•			•	•					•		•		•	•	•	•
Quality certification/ accreditation of care facilities for stroke patients	•		•	•			•		•	•			•		•		•	•		
Evaluation of performance and quality			•	•			•	•	•	•			•		•		•	•	•	•
Guidelines of care for stroke patients	•		•	•			•		•	•	•	•	•		•		•	•	•	•
Definition of organised pathways of stroke care			•	•			•	•	•	•			•				•	•	•	•
Creation of networks of care for stroke patients			•	•				•	•	•			•		•		•	•	•	•
Stroke units establishment			•				•	•	•	•			•		•		•	•	•	•
Thrombolysis in acute stroke patients			•				•		•	•	•	•	•		•		•	•	•	•
Other	•	•	•																	

Table IV. Public financial incentives at national (N) and regional (R) levels by areas of care and country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Stroke prevention strategies			•	•	•		•			•				•	•		•	•		
Primary care			•	•	•		•			•				•	•			•		
Emergency care			•		•					•					•		•	•		
Hospital care			•	•	•		•			•	•	•	•		•			•		•
Specialist care (stroke units)			•		•		•			•				•				•		•
Post stroke Rehabilitation programs					•		•			•			•					•		
Continuing medical education					•					•	•	•	•							
Stroke guidelines implementation					•						•	•	•							

Table V. Characteristics of public financial incentives in primary (P), hospital (H) and specialist (S) settings of care by country.

	Belgium			England			France			Germany			Italy			Lithuania			Poland			Scotland			Spain			Sweden		
Public incentives	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**
Fee-for-service													•																	
Salary incentives to health professionals				•				•	•				•												•	•	•			
Salary incentives to local administrators								•	•					•	•									•	•	•	•			
Drug formularies				•						•															•					
Incentives to hospital admissions									•		•			•	•															
Incentives to stroke units implementation								•	•			•			•					•									•	•
Incentives to thrombolysis in acute phase								•	•			•								•					•	•			•	•
Shareholding in diagnostic facilities																														
Fee for preferential drugs prescriptions or use of medical supplies										•															•					
Ceiling for annual patients revenue										•																•	•			
Bonuses according to quality of care				•	•																	•							•	•
Bonuses according to the total volume of prescriptions										•																				
Other																	•	•		•	•								•	•

Table VI. Private financial incentives at national (N) and regional (R) levels by areas of care and country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Stroke prevention strategies									•											
Primary care										•										
Emergency care																				
Hospital care																				
Specialist care (stroke units)										•			•							
Post stroke Rehabilitation programs																				
Continuing medical education									•				•							
Stroke guidelines implementation									•				•							

Table VII. Characteristics of private financial incentives in primary (P), hospital (H) and specialist (S) settings of care by country.

	Belgium			England			France			Germany			Italy			Lithuania			Poland			Scotland			Spain			Sweden		
Private incentives	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**
Fee-for-service													•																	
Salary incentives to health professionals																														
Salary incentives to local administrators																														
Drug formularies																														
Incentives to hospital admissions																														
Incentives to stroke units implementation															•					•										
Incentives to thrombolysis in acute phase																				•										
Shareholding in diagnostic facilities																														
Fee for preferential drugs prescriptions or use of medical supplies																														
Ceiling for annual patients revenue																														
Bonuses according to quality of care																														
Bonuses according to the total volume of prescriptions																														
Other															•															

Table VIII. Mandatory continuing professional education for health professionals by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
Primary care physicians	•	•	•		•	•	•	•		
Hospital physicians	•	•	•		•	•	•	•		
Specialists	•	•	•	•	•	•	•	•		
Nurses	•	•	•		•	•		•		
Physiotherapists	•	•	•		•	•		•		
Speech therapists	•	•	•		•	•		•		
Occupational therapists	•	•	•		•	•		•		
All health personnel	•	•	•		•	•		•		

Table IX. Distribution of printed/electronic educational materials at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Distribution of articles, reviews, trials results	•	•	•	•	•	•	•	M		•	•	•	•	•			•			
Distribution of stroke scales			•	•	•	•	•	M		•	•		•	•			•			
Distribution of journals, newsletters, bulletins	•	•	•	•	•		•	M		•			•	•	•	•	•	•		
Distribution of clinical practice guidelines	•	•	•	•	•		•	M	•	•	•	•	•	•	•	•	•	•	•	•
Distribution of audio-visual materials			•	•	•		•	M		•								•		
Distribution of electronic publications	•	•	•	•	•		•	M		•			•						•	•
Provision of free internet access to medical education websites			•	•	•		•	M		•	•	•	•		•		•		•	•

Table X. Focus of printed or electronic educational materials in primary (P), hospital (H) and specialist (S) settings of care by country.

	Belgium			England			France			Germany			Italy			Lithuania			Poland			Scotland			Spain			Sweden		
	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S
Primary prevention	•			•	•	•	•	•	•	•			•	•	•	•	•	•	•			•	•	•	•	•	•	•	•	•
Acute phase management	•			•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•		•	•	•		•	•	•	•	•
Rehabilitation				•	•	•				•	•	•	•	•	•	•	•	•		•		•	•	•		•	•	•	•	•
Secondary prevention	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Guidelines	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Clinical pathways				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				•	•	•
Counselling				•	•	•	•	•	•	•	•	•	•	•	•													•	•	•

Table XI. Educational meetings and workshops at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Conferences, courses, symposia, lectures	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Small groups meetings, rounds, case discussion, seminars and tutorials, workshops	•		•	•	•	•		•		•		•	•	•	•	•	•	•	•	•
Individual educational programs, interactive educational programmes, role play, training programmes	•	•	•	•			•	•		•			•	•			•	•		
Teaching computer programmes, task simulation, virtual reality, internet-supported educational programmes			•	•	•	•	•	•		•			•	•	•	•			•	•

Table XII. Educational meetings and workshops in primary (P), hospital (H) and specialist (S) settings of care by country.

	Belgium			England			France			Germany			Italy			Lithuania			Poland			Scotland			Spain			Sweden		
	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S
Conferences	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Courses	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Rounds	•	•	•		•	•	•	•	•	•	•	•		•	•		•	•		•	•		•	•	•	•	•	•	•	•
Small groups meetings	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Large groups meetings	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•
Workshops	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				•	•	•	•			•	•	•	•	•	•
Symposia	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				•	•	•				•	•	•	•	•	•
Lectures	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•
Interactive educational programs	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•					•	•	•	•					•	•	•
Interactive programs for guidelines dissemination	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•					•	•	•	•	•		•	•			
Individual educational programs				•	•	•	•	•	•	•	•	•	•	•	•				•	•	•					•	•	•	•	•
Mixed interactive and didactic education meetings	•			•	•	•	•	•	•	•	•	•		•	•					•	•	•	•	•				•	•	•
Case discussion	•	•	•	•	•	•		•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Seminars and tutorials	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•		•	•	•	•	•	•	•	•
Teaching computer programme				•	•	•	•	•	•	•	•	•																•	•	•
Internet-supported educational programmes	•	•	•	•	•	•	•		•	•	•	•		•	•		•	•				•	•	•				•	•	•
Simulation (task simulation, virtual reality)				•	•	•	•	•	•					•	•															
Role play								•						•	•															

Training programs	•	•	•	•	•	•	•	•	•					•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•
Training programs on clinical pathways				•	•	•	•	•	•				•	•	•				•	•	•				•			•	•	•
Educational outreach programs				•	•	•	•	•	•						•				•	•	•									
Combination of the above mentioned	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				•	•	•	•	•	•	•	•	•	•	•	•

Table XIII. Focus of educational meetings and workshops in primary (P), hospital (H) and specialist (S) settings of care by country.

	Belgium			England			France			Germany			Italy			Lithuania			Poland			Scotland			Spain			Sweden		
	P	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**	**P**	**H**	**S**
Primary prevention	•	•	•	•	•	•	•	•	•	•			•	•	•	•			•	•	•	•			•	•	•	•	•	•
Acute phase management		•	•	•	•	•	•	•	•		•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•
Rehabilitation		•	•	•	•	•	•		•		•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Secondary prevention		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Guidelines dissemination		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Clinical pathways		•	•	•	•	•	•	•	•				•	•	•				•	•	•	•	•	•	•	•	•	•	•	•
Counselling							•	•	•	•	•	•		•	•				•	•	•						•	•	•	•

Table XIV. Health professionals interested by educational outreach visits at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Primary care physicians				•																
Hospital physicians			•	•	•	•														
Specialists			•	•	•	•														
Nurses			•	•																
Physiotherapists			•	•																
Speech therapists			•	•																
Occupational therapists			•	•																
All health personnel				•																

Table XV. Media involved in educational campaigns at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Television	•		•	•	•	•	•	•	•	•	•	•	•		•	•		•	•	•
Radio	•		•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•
Newspapers	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Billboards			•	•	•		•	•	•				•	•	•	•			•	•
Posters	•		•	•	•		•	•	•	•	•	•			•	•	•	•	•	•
Leaflets	•		•	•	•		•	•	•	•	•	•	•		•	•	•	•	•	•
Booklets	•		•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•
Internet	•		•	•	•		•	•	•	•			•	•	•	•	•	•	•	•
Social Networks			•	•	•		•	•	•											
Internet Social Networks			•	•	•		•	•	•								•			

Table XVI. Targets of stroke educational campaigns at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Stroke risk factors	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Medical screening campaigns	•		•	•	•		•	•	•	•			•	•			•	•	•	•
Acknowledgment of early stroke symptoms	•		•	•	•		•	•	•	•			•	•	•	•	•	•	•	•
Stroke as a medical emergency, requiring urgent help	•		•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•
Need to call an ambulance if a stroke is suspected	•		•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•
Thrombolysis			•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•

Table XVII. Strategies employed for the implementation of guidelines at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Distribution of educational material	•	•	•	•	•	•	•			•	•	•	•	•	•			•	•	•
Distribution of structured record sheet checklists			•	•	•	•				•						•				
Educational meetings	•	•	•	•	•	•				•	•	•	•	•	•	•	•	•	•	•
Interactive educational strategies (workshops and practical sessions)	•	•	•	•	•	•				•	•	•			•	•	•	•	•	•
Written reminders					•	•				•						•				
Computerised reminders			•	•	•	•										•		•		
Audit and feedback			•	•						•			•	•	•	•		•	•	•
Educational outreach visits			•	•	•	•														
Opinion leaders actions	•	•	•	•	•	•	•			•	•	•	•	•		•	•		•	•
Local consensus processes	•	•	•	•	•	•				•						•	•	•		
Marketing (personal interviewing, focus groups discussion)					•	•												•		
Mass media (television, radio, newspapers, etc.)			•	•	•	•							•	•					•	•
Internet			•	•	•	•	•				•	•					•		•	•
Multifaceted interventions			•	•						•								•	•	•

Table XVIII. Formats of stroke care audits at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Written		•			•	•		•		•							•		•	•
Electronic		•	•	•	•	•		•		•			•	•	•		•	•	•	•

Table XIX. Information collected by audits at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Primary prevention			•	•	•	•							•				•			
Appropriate drugs indications			•	•	•	•		•		•			•		•			•	•	•
Referrals to stroke units		•	•	•	•	•		•		•			•	•	•		•	•	•	•
Acute care		•	•	•	•	•		•		•			•	•	•		•	•	•	•
Specialist care		•	•	•	•	•		•		•				•	•		•	•	•	•
Compliance with practice guidelines of stroke care			•	•	•	•		•		•			•	•	•		•	•	•	•
Stroke patient outcomes			•	•	•	•		•		•			•	•	•		•	•	•	•
Innovations in practice of stroke care			•		•	•							•						•	•
Costs of stroke care			•		•	•		•		•			•	•	•			•		
Nurse-physician collaboration		•			•	•				•							•		•	•

Table XX. Sources of the information for audits at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Direct observations from patients					•	•		•		•									•	•
Medical records		•	•	•	•	•		•		•					•		•	•	•	•
Computerised databases			•	•	•	•		•		•			•	•	•		•	•	•	•

Table XXI. Use of electronic or written reminders by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Electronic			•												•	•				
Written			•													•				

Table XXII. Purposes for the use of reminders at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Primary prevention			•												•					
Vascular risk assessment			•												•					
Acute phase management			•													•				
Specialist care			•													•				
Diagnosis			•													•				
Prescribing drugs			•												•	•				
Disease management			•												•	•				
Ordering tests and exams			•													•				
Rehabilitation																				
Secondary prevention			•												•	•				
Follow-up			•																	
Adherence to therapy																				
Adherence to guidelines																•				

Table XXIII. Purposes for the use of computerised decision support systems at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Primary prevention			•	•											•	•		•		
Acute phase management								•							•	•		•		
Prescribing drugs, ordering tests and exams			•	•				•							•	•		•		
Administrative and clinical records (i.e. ICD IX/X diagnosis)			•	•				•							•	•		•		
Rehabilitation								•												
Follow-up and secondary prevention			•	•				•							•	•		•		
Guidelines implementation			•	•				•							•	•				

Table XXIV. Opinion leaders' activities by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
One-to-one or small group teaching		•	•		•			•		
Visits to the health care providers' offices		•	•		•	•	•			
Formal education (e.g. lectures, conferences, symposia)	•	•	•	•	•	•	•	•	•	•
Informal education (e.g. group discussions)	•	•	•	•	•	•	•	•	•	•
Distribution of educational material	•	•	•	•	•	•	•		•	•
Educational campaigns	•	•	•	•	•	•	•	•	•	•

Table XXV. Figures considered as possible opinion leaders by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
Policymakers		•	•	•	•					
Academics	•	•	•	•	•	•	•	•	•	•
Health care professionals	•	•	•	•	•		•	•	•	•
Health care Administrators			•		•					
Patient Association Representatives		•		•	•		•			•
Celebrity Stroke Survivors	•	•		•	•		•		•	

Table XXVI. Targets of opinion leaders' activities at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Primary care physicians	•	•	•	•	•	•	•	•	•	•			•	•		•	•	•	•	•
Hospital physicians	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•	•
Specialists	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•
Policymakers	•	•	•	•		•	•	•	•	•			•	•	•			•	•	•
Healthcare Administrators	•	•	•	•		•			•	•	•	•	•	•	•	•		•	•	•
Stroke patient associations	•	•	•	•	•	•	•	•	•	•				•	•		•		•	•

Table XXVII. Multiprofessional meetings in the different settings of stroke care at national (N) and regional (R) levels by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Primary care			•	•	•	•				•							•	•		
Hospital care			•	•	•	•				•			•	•	•	•	•	•	•	•
Specialist care			•	•	•	•	•	•		•			•	•	•	•	•	•	•	•

Table XXVIII. Characteristics of multiprofessional collaboration in primary (P), hospital (H) and specialist (S) settings of care by country.

	Belgium			England			France			Germany			Italy			Lithuania			Poland			Scotland			Spain			Sweden		
	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S	P	H	S
Videoconferencing or audioconferencing used for multiprofessional meetings							•	•	•		•	•												•						
Regular multiprofessional rounds in the different settings of stroke care				•	•	•	•	•	•		•	•	•	•	•					•	•			•	•	•	•		•	•
Multiprofessional audits with an external facilitator				•	•	•	•	•	•		•	•		•	•					•	•			•	•	•	•			
Team learning activities to improve unit-wide clinical practice				•	•	•	•	•	•		•	•		•	•					•	•			•	•	•	•		•	•

Table XXIX. Pathways of care or protocols between acute-phase care and general physicians, and between rehabilitation services and general physicians by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
Acute-phase care and GPs										
National level		•	•							•
Regional level		•	•		•			•	•	•
Rehabilitation services and GPs										
National level		•	•							•
Regional level		•	•					•		•

Table XXX. Multifaceted interventions at national and regional levels by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
National level		•	•	•		•	•	•		•
Regional level		•	•	•	•	•	•		•	•

Table XXXI. Combined strategies in multifaceted interventions by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
National legal or guidance strategy		•	•				•	•		
Regional legal or guidance strategy		•	•	•				•	•	
National non-mandatory policies		•	•	•			•	•		•
Regional non-mandatory policies		•	•					•	•	•
Financial incentives		•	•	•	•	•	•	•	•	
Continuing Medical education strategies		•	•			•	•	•	•	
Distribution of printed or electronic educational material		•	•			•	•	•	•	•
Educational meetings and workshops		•	•	•			•	•	•	•
Educational outreach visits		•	•				•			
Educational campaigns		•	•		•		•		•	•
Guidelines production and dissemination		•	•	•			•	•	•	•
Audits and feedbacks		•	•	•	•		•	•	•	•
Reminders										
Computerised decision support								•	•	
Opinion leaders		•	•	•		•		•		•
Multiprofessional collaboration		•	•	•			•	•	•	
Users' involvement strategies		•	•					•	•	

Table XXXII. Stroke Patients Associations by country

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
National level	•	•	•	•	•		•	•	•	•
Regional level	•	•	•	•	•				•	•

Table XXXIII. Initiatives promoted by Stroke Patients Associations by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
National/ Regional campaigns to promote stroke awareness	•	•	•	•	•		•	•	•	•
Surveys on stroke prevention awareness strategies	•	•	•	•	•			•	•	
Campaigns to encourage healthy lifestyles (e.g. blood pressure and cholesterol awareness and monitoring)	•	•	•	•	•		•	•	•	•
Campaigns to promote the establishment of stroke units		•	•	•	•		•	•		•
Provision of rehabilitation to stroke patient		•	•	•	•		•	•		
Implementation of secondary prevention strategies	•	•	•	•	•		•	•		•
Psychological support/support groups for stroke survivors and/or carers	•	•	•	•	•		•	•	•	•

Table XXXIV. Services of Stroke Patients Associations by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
Information, advice and support services		•	•	•	•		•	•	•	
Stroke prevention services		•	•		•		•	•		
Communication support		•	•	•	•		•	•	•	
Reablement of social inclusion		•	•	•	•		•	•	•	
Carer support (training, economic support, reimbursement, tax reduction)		•	•	•	•		•	•	•	

Table XXXV. Involvement of Stroke Patients Associations in planning strategies by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
Implementation of stroke services		•	•	•	•		•	•		•
Management of acute stroke (guidelines definition, etc.)		•	•	•	•		•	•		•
Prevention (primary, and secondary; mass media campaigns; health education campaigns in school; ban of smoking in public places etc.)		•	•	•	•		•	•		•
Rehabilitation after stroke		•	•	•	•		•	•		•
Evaluation of stroke outcome and quality assessment		•	•	•	•		•	•		•

Table XXXVI. Consultation or involvement of Stroke Patients Associations in services for stroke survivors by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
Stroke service development		•	•		•			•		•
Stroke quality assessment		•	•		•			•		•
Stroke audits		•	•		•			•		•
Stroke audits (patients'report)		•	•					•		•
Stroke information campaign planning	•	•	•		•		•	•		•
Stroke educational programs		•	•		•			•	•	•
Stroke clinical pathways		•	•		•					•
Stroke guidelines (version for professionals)		•	•	•	•		•	•		•
Stroke guidelines (version for patients)		•	•	•				•		•

Table XXXVII. Involvement of Stroke Patients Associations in stroke research by country.

	Belgium	England	France	Germany	Italy	Lithuania	Poland	Scotland	Spain	Sweden
Identifying priorities for research		•	•	•	•					•
Assisting in the design of research		•	•		•					
Preparation of material used to consent and inform stroke research subjects			•		•					
Interpretation of research findings			•		•					•
Dissemination of research findings		•	•	•	•					•
Implementation of stroke research findings			•	•	•			•		•

Table XXXVIII. Performance indicators at national (N) and regional (R) levels, by country.

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Stroke unit care			•	•	•	•	•	•		•			•	•	•	•	•		•	•
Stroke patients admitted to a stroke unit/total admissions for stroke			•	•	•	•				•			•	•	•	•	•	•	•	•
Door to hospital time			•	•	•	•				•			•				•		•	•
Number of patients hospitalised within 3 hours from symptoms			•	•	•	•				•			•	•			•		•	•
Proportion of time in stroke unit			•	•	•	•				•				•	•	•		•	•	•
Brain imaging			•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•
Carotid vessels imaging			•	•	•	•	•	•		•			•	•	•	•	•		•	•
Swallowing test			•	•			•	•		•					•	•		•	•	•
Assessment by physiotherapist			•	•	•	•	•	•		•			•			•	•	•	•	•
Assessment by occupational therapist			•	•	•	•	•	•		•			•			•	•	•	•	•
Thrombolytic therapy			•	•	•	•	•	•		•			•	•	•	•	•	•	•	•
Time to thrombolytic therapy			•	•	•	•	•	•		•					•	•	•	•	•	•
Antiplatet therapy			•	•	•	•	•	•		•			•	•	•	•		•	•	•
Anticoaugulants in patients with atrial fibrillation			•	•	•	•	•	•		•			•	•	•	•	•	•	•	•
Lipid lowering			•	•	•	•				•			•		•	•		•	•	•
Blood pressure lowering			•	•	•	•				•			•	•	•	•	•	•	•	•
Length of stay			•	•	•	•				•	•	•	•	•	•	•		•	•	•
Death during hospital period	•		•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•

	Belgium		England		France		Germany		Italy		Lithuania		Poland		Scotland		Spain		Sweden	
	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R
Discharge destination			•	•		•	•	•		•			•		•	•		•	•	•
Death or disability at 1-3 months			•	•	•	•				•							•	•	•	•
Long term death or disability				•	•	•				•					•	•	•		•	•
Institutionalisation rates			•	•	•	•				•			•		•	•			•	•
Complication rates			•	•	•		•	•		•			•					•	•	•
Quality of life measures					•														•	•
Healthcare process outcomes			•	•	•	•							•						•	•
Readmission rates			•	•	•	•				•					•	•				
Prevention therapy adherence rates			•	•	•	•												•	•	•
Patient satisfaction with services				•	•					•									•	•
Results of cost-benefit analyses			•		•															
Provision of information to patients and relatives			•	•	•		•	•		•						•		•	•	•
Early supported discharge			•	•	•	•				•						•			•	•